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REMARKS

Status of Claims:

Claims 31-32 are now pending herein. Claim 31, the only independent claim, has been amended herein to even further distinguish over the art of record.

Rejection of Claims 31-32 under 35 U.S.C. 103(a)

Claims 31-32 were rejected under 35 U.S.C. 103(a) as being unpatentable over Okabe et al (U.S. Patent No. 5,925,911, hereinafter "Okabe") in view of newly-cited Chiozzi et al (U.S. Patent No. 6,194,761, hereinafter "Chiozzi"). This rejection is respectfully traversed and reconsideration is requested.

Independent Claim 31, as amended herein, is directed to a method of forming a trench DMOS transistor device including (among others) the steps of "etching a trench extending into said epitaxial layer from an upper surface of said epitaxial layer...forming a low resistivity deep region of said first conductivity type *below a portion of said trench already formed (see Figure 3B)*... said deep region acting to provide electrical contact with said substrate...and *forming a source region of said first conductivity type within an upper portion of said epitaxial layer over the deep region, wherein the source region within the upper portion of said epitaxial layer completely overlies the deep region*".

Both Okabe and Chiozzi fail to teach or suggest a method in accordance with independent Claim 31, including the step of forming a low resistivity deep region *below a portion of a trench previously formed*. While Applicants believe that Claim 31 already defined over these patents for this reason, to even further clarify this distinction, Claim 31 has been amended to recite the formation of a low resistivity deep region below a portion of a trench already formed. Okabe's method does not do so (see Figure 4), nor does Chiozzi's method (see Figure 3 and col. 3, lines 29-35).

For at least the foregoing reason, independent Claim 31, as amended herein, is patentable over Okabe and Chiozzi, separately or in any permissible combination.

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In addition, the Action acknowledges that Okabe "does not disclose the step of forming a region of same conductivity type with the deep region 31 and completely overlying the deep region". Applicants agree with this statement, and also submit however that Chiozzi fails to provide the requisite teaching.

The Action alleges that Fig. 3 of Chiozzi "teaches the forming of a low resistivity deep region 19...and the forming of a region (not labeled) of the same conductivity type with the deep region within the upper portion of the epitaxial layer 10 and completely overlying the deep region 19". Again, Applicants respectfully note that neither Okabe nor Chiozzi teach or suggest a low resistivity deep region of said first conductivity type that is formed *below a portion of said trench already formed*. In addition, Chiozzi does not teach or suggest the formation of a "source region over the deep region that completely overlies the deep region". Rather, Chiozzi simply recites that "n-type region 19...extends in the first region 13...through its entire depth to be joined to a buried n-type layer 20" (col. 3, lines 28-34). Chiozzi then notes that "first metal electrode 21 is in ohmic contact with the surface of the fifth region 19" – while Applicants agree that there is some indication of a region that is drawn above n-type region 19 in Figure 3 of Chiozzi the description of the invention fails to mention any such region – and in fact describes the transistor shown *without* any mention of any such region (see both quoted sections above).

For at least the foregoing reason, it is respectfully submitted that independent Claim 31, as amended herein, is patentable over Okabe and Chiozzi. Claim 32 is dependent on, and contains all the limitations of Claim 31, and as such is submitted to be patentable for at least the same reasons as Claim 31.

Accordingly, Applicants respectfully request reconsideration and withdrawal of the outstanding claim rejections under 35 U.S.C. §103(a).

CONCLUSION

Applicants submit that Claims 31-32 are presently in condition for allowance, early notification of which is earnestly solicited. Should the Examiner be of the view that an interview would expedite consideration of this Amendment or of the application at

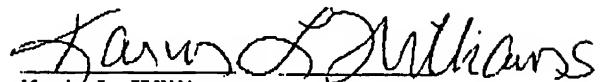
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large, request is made that the Examiner telephone the Applicant's attorney at (908) 518-7700 in order that any outstanding issues be resolved.

FEES

The Office is authorized to charge any fees required to deposit account number 50-1047.

Respectfully submitted,


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